FEB 19 2009

DARDI & ASSOCIATES, PLLC

ATTORNEYS AT LAW

Intellectual Property-patents, trademarks & copyrights

Peter S. Dardi, Ph.D.
Curtis B. Herbert, Ph.D.
Elizabeth Quan Shipsides

Patent Agent
Mengmeng A. Fahrni, Ph.D.

U.S. Bank Plaza
Suite 2000
220 South Sixth Street
Minneapolis, MN 55402
612.746.3005 phone
612.746.3006 fax

One Security Centre
Suite 400
3490 Piedmont Road
Atlanta, GA 30305
404.949.5730 phone
612.746.3006 fax

FACSIMILE COVER SHEET

TOTAL NUMBER OF PAGES BEING SENT: 21

[ ] Original documents to follow by mail [X] No originals will be sent

DATE: February 19, 2009

TO: Board of Patent Appeals and Interferences

PHONE #: 571-272-4000
FAX #: 571-273-8300

Application No.: 09/845,985
Applicant: Chaloner-Gill et al.
Due Date: February 22, 2009

OUR REF.: 2950.20US01
Appeal No. **2008-4615**

FROM: Peter S. Dardi, Ph.D.
PHONE #: 404-949-5730

Attached is the following for filing in the above-identified application.

(1). Request for Rehearing Under 37 C.F.R. 41.52.

Respectfully submitted,

Peter S. Dardi

Peter S. Dardi, Ph.D.
Registration No. 39,650

CERTIFICATE OF FACSIMILE TRANSMISSION

I hereby certify that this paper is being transmitted by facsimile to the U.S. Patent and Trademark Office, Fax No. 571-273-8300 on the date shown below.

February 19, 2009
Date

Peter S. Dardi
Peter S. Dardi, Ph.D.

RECEIVED
CENTRAL FAX CENTER
FEB 19 2009

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the application of: Attorney Docket No.: 2950.20US01

Chaloner-Gill et al. Confirmation No.: 2942

Application No.: 09/845,985 Examiner: Mark Ruthkosky

Filed: April 30, 2001 Group Art Unit: 1745

Appeal: **2008-4615**

For: PHOSPHATE POWDER COMPOSITIONS AND METHODS FOR FORMING PARTICLES WITH COMPLEX ANIONS

BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

REQUEST FOR REHEARING UNDER 37 C.F.R. 41.52

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the application of: Attorney Docket No.: 2950.20US01

Chaloner-Gill et al. Confirmation No.: 2942

Application No.: 09/845,985 Examiner: Mark Ruthkosky

Filed: April 30, 2001 Group Art Unit: 1745

Appeal: **2008-4615**

For: PHOSPHATE POWDER COMPOSITIONS AND METHODS FOR FORMING PARTICLES WITH COMPLEX ANIONS

BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES
REQUEST FOR REHEARING

Mail Stop Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

INTRODUCTORY COMMENTS

Applicant respectfully requests rehearing of Appeal 2008-4615 directed to a Decision mailed December 22, 2009 based on the following errors of law and errors of fact. This Request For Rehearing is timely filed.

Please grant any extension of time necessary for entry; charge any fee due to Deposit Account No. 50-3863.

CERTIFICATE OF FACSIMILE TRANSMISSION

I hereby certify that this paper is being transmitted by facsimile to the U.S. Patent and Trademark Office, Fax Nos. 571-273-8300 and 571-273-0052 on the date shown below.

February 19, 2009
Date

Peter S. Dardi
Peter S. Dardi, Ph.D.

STATEMENT OF THE CASE

Appellant appealed four rejections. The Board reversed the following rejections.

1. Claims 1-3, 6-9, 12, 14-21, 48-50, 52-56, and 58-61 were rejected under 35 U.S.C. § 112, second paragraph as failing to particularly point out and distinctly claim the subject matter which applicants consider to be the invention.

2, Claims 54, 58, 59, and 61 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Bödiger in view of Bi.

These reversed rejections are not discussed further.

The Board affirmed the following rejections.

1. Claims 1-3, 6, 7, 12, 14-17, 19-21, 48-50, 52, 53, 55, 56, and 58-61 stand rejected under 35 U.S.C. § 103(a) as being unpatetnable over Kamauchi in view of Manev.

2. Claims 8, 9, and 18 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Kamauchi in view of Manev and Goodenough.

Since claim 54 evidently is no longer rejected, it would appear that this claim has been allowed. The other pending claims stand rejected. The citations to the references are presented in the Board decision as well as in the main briefs, and therefore are not presented again here. The references are cited below based on the last name of the first listed inventor of the patent. With all due respect, Appellant asserts that the decision affirming the pending rejections was based on errors of law and errors of fact as presented in the following. Appellant respectfully requests Rehearing regarding the pending rejections based on the following arguments.

ANALYSIS

ISSUES

The Board provided a useful summary of the issues on page 9 of the Decision. Appellant bases further discussion on these issues. The issues are as follows.

1. Have Appellants shown that the Examiner reversibly erred in determining that Kamauchi in view of Manev teach or suggest the claimed particle size and particle size distribution?

2. Have Appellants shown that the Examiner reversibly erred in determining that there is a reasonable expectation of success in combining Manev's disclosure to decrease particle size and particle size distribution for positive electrode (i.e. cathode) intercalation materials with Kamauchi's cathode in the lithium battery? [With all due respect, we believe that the Board intended cathode rather than cation.]

3. Have Appellants shown that the Examiner reversibly erred in determining that Manev does not teach away from the combination for positive electrode (i.e. cathode) intercalation materials with Kamauchi's cathode in the lithium battery?

4. Did the Appellants' evidence provided in the Horne Declaration rebut the Examiner's obvious rejection? With all due respect, Appellant further discusses other objective evidence of record with respect to evaluating this issue.

Issue 1

Clear Error of Law Relating to The Claimed Particle Size And Distribution

The case law is clear regarding the establishment of *prima facie* unpatentablility that the cited references must teach how to make a composition of matter to place the material in the hands of the public. If the cited references do not teach how to make such a composition of matter, a *prima facie* case of unpatentability is not established. A review of the cited references makes it very clear that the references simply do not teach or assert to teach how to make the

claimed composition of matter. After a review of the relevant case law, the teachings of the references are reviewed to elaborate on the clear failure of the references to place the claimed subject matter in the hands of the public.

The proposition is well established that the cited art only renders a composition of matter or apparatus unpatentable to the extent that the cited art enables the disputed claims, in other words, if the cited art provides a means of obtaining the claimed composition or apparatus.

> To the extent that anyone may draw an inference from the Von Bramer case that the <u>mere</u> printed conception or the <u>mere</u> printed contemplation which constitutes the designation of a 'compound' is sufficient to show that such a compound is old, regardless of whether the compound is involved in a 35 U.S.C. 102 or 35 U.S.C. 103 rejection, we totally disagree. ... We think, rather, that the true test of any prior art relied upon to show or suggest that a chemical compound is old, is whether the prior art is such as to place the disclosed 'compound' in the possession of the public. <u>In re Brown</u>, 141 USPQ 245, 248-49 (CCPA 1964) (emphasis in original) (citations omitted).

Similarly, see <u>In re Hoeksema</u>, 158 USPQ 596, 600 (CCPA 1968) (emphasis in original):

> We are certain, however, that the invention as a whole is the claimed compound <u>and</u> a way to produce it, wherefore appellant's argument has substance. There has been no showing by the Patent Office in this record that the claimed compound can exist because there is no showing of a known or obvious way to manufacture it; hence, it seems to us that the 'invention as a whole,' which section 103 demands that we consider, is not obvious from the prior art of record.
>
> While there are valid reasons based on public policy as to why this defect in the prior art precludes a finding of obviousness under section 103, In re Brown, supra, its immediate significance in the present inquiry is that it poses yet <u>another difference</u> between the claimed invention and the prior art which <u>must</u> be considered in the context of section 103. So considered, we think the differences between appellant's <u>invention as a whole</u> and the prior art are such that the claimed invention would not be obvious within the contemplation of 35 U.S.C. 103.

The Federal Circuit has further emphasized these issues. Assertions in a prior art reference do not support an anticipation or obviousness rejection unless the references place the claimed invention in the hands of the public. <u>Beckman Instruments Inc. v. LKB Produkter AB</u>, 13 USPQ2d

1301, 1304 (Fed. Cir. 1989). "In order to render a claimed apparatus or method obvious, the prior art must enable one skilled in the art to make and use the apparatus or method." Id. While a properly citable reference is prior art for all that it teaches, references along with the knowledge of a person of ordinary skill in the art must be enabling to place the invention in the hands of the public. In re Paulsen, 31 USPQ2d 1671, 1675 (Fed. Cir. 1994). See also In re Donohue, 226 USPQ 619, 621 (Fed. Cir. 1985). "[A] § 102(b) reference "must sufficiently describe the claimed invention to have placed the public in possession of it." Paperless Accounting, Inc. v. Bay Area Rapid Transit Sys., 804 F.2d 659, 665 (Fed. Cir. 1986), cert. denied, 480 U.S. 933 (1987)(quoting In re Donohue, 766 F.2d at 533). An enabling disclosure is one that allows a person of ordinary skill to practice the technology without undue experimentation based on the guidance in the disclosure along with what is well known in the art. In re Wands, 858 F. 2d 731, 737 (Fed. Cir. 1988).

It is well acknowledged that Kamauchi does not teach the uniformity of the powders described in that patent. Manev does not teach the formation of lithium metal oxide particles with an average particle size less than a micron. Therefore, Manev does not teach how to produce particles with an average particle size below a micron and having a uniform particle size. Therefore, the combined teachings of the cited references simply do not teach how to make a relevant powder with an average particle size below a micron and a high particle uniformity. While the average particle sizes in Manev and Appellant's claimed invention touch at 1 micron, this is not an anticipation rejection. Manev teaches lithium metal oxides while the claimed subject matter is metal phosphates, which are significantly different materials having a complex anion. The art is certainly not at a high level of predictability since nanotechnology is not that highly developed. A moderate level of unpredictability in view of the differences in the compositions of matter easily overcomes any arguments based on the touching of the average particle sizes. Since the combined teachings of Manev and Kamauchi simply do not put Appellant's claimed invention in the hands of the public, a finding of obviousness is a **very clear error of law**, and this is reversible error.

Group 2 Claims - Appellant notes that group 2 claims have a maximum cut off in particle size of 250 nm. This upper limit in average particle size is even more clearly distinct from the particle sizes taught in Manev since there is a factor of 4 between the upper limit of Appellant's claimed average particle size and the lower limit of Manev's disclosed average particle size. Therefore, it is even clearer that the combined teachings of the references do not place the subject matter of group 2 claims in the hands of the public. Under binding precedent, the rejection of group 2 claims must be reversed.

Clear Error of Fact Relating to Separately Considering the Interrelated Properties

With respect to the average particle sizes and the particle size distribution, these are distinct but interrelated properties of the claimed compositions of matter. With all due respect, the Board has failed to consider the interrelated nature of theses properties. Ignoring this interrelatedness is a clear error of fact. When taking into account the interrelatedness of these properties, the cited references simply do not teach or suggest the claimed compositions of matter.

In Factual Finding 15 on page 13 of the Board decision, the Board notes that Manev asserts particle size distributions with particle sizes from 1 to 15 microns and with 99% of the particle having a diameter less than 40 microns. The Board then concludes in their analysis that this teaching can relate to the formation of uniform particles with an average particle size less than a micron. With all due respect, this does not follow, and the conclusion is a clear error of fact.

Advances in technology have made it possible to operate on many different distance scales from the very large to the very small. Greatly different principles operate on divergent distance scales. Consider SiO_2, silica, and related materials. Silica has been used to form glass

and optical devices for a long time. Silica glass mirrors can be highly polished for the formation of precision optics for telescopes and the like. But the fine processing of macroscopic silica mirrors does not say anything about the formation of silica nanoparticles.

Manev is directed to powders with average particle sizes greater than a micron. The principles operating in Manev are not expected to extend into the submicron scale. Manev does not state or imply that their processes are applicable to particle size scales with average diameters less than a micron. There is absolutely no evidence on record to support an assertion that Manev teaches how to produce uniform powders with an average particle size less than a micron. It is a **clear error of fact** to extrapolate the discussion of Manev at a distance scale greater than a micron into a distance scale less than a micron average particle size. This clear error of fact is reversible error.

With all due respect, even using hindsight based on Appellant's disclosure, the Board's conclusion does not even follow then. Appellant's specification does not describe the use of the techniques of Manev, and there is still absolutely no evidence known to support the Examiner's and Board's propositions that Manev's approach works on a submicron scale. Since there is absolutely no evidence, not even hindsight, to support the Board's factual leap, the Board's conclusions are based on clear error of fact in relation to the applicability of the references teachings to submicron average particle size powders with high particle uniformity. On all of the facts on record, the combined teachings of the references simply do not teach or suggest the claimed average particle size combined with the claimed particle uniformity.

In the discussion of issue 1, the Board raised the issue of unexpected results. This issue is discussed in the following analysis under issue 4.

<u>Error of Law in Shifting Burden Onto Applicant</u>

It is well established law that rebuttal evidence of obviousness is only needed if a proper case of *prima facie* obviousness is established. "In rejecting claims under 35 U.S.C. §103, the

examiner bears the initial burden of presenting a prima facie case of obviousness." In re Rijckaert, 28 USPQ2d 1955, 1956 (Fed. Cir. 1993). Prima facie obviousness is not established if all the elements of the rejected claim are not disclosed or suggested in the cited art. In re Ochiai, 37 USPQ 1127, 1131 (Fed. Cir. 1995). ("The test for obviousness *vel non* is statutory. It requires that one compare the claim's 'subject matter as a whole' with the prior art 'to which said subject matter pertains.'"). If the Examiner fails to establish a prima facie case of obviousness, the obviousness rejection must be withdrawn as a matter of law. In re Ochiai, 37 USPQ at 1131 ("When the references cited by the examiner fail to establish a prima facie case of obviousness, the rejection is improper and will be overturned.").

On page 15 and 16 of the Board's Decision, the Board states the following: "Moreover, the disclosures of Manev and Kamauchi regarding intercalation materials differ from the claimed invention only in terms of their particle size distribution ranges. As such, Appellants must show that the particle size distribution ranges recited in claims 1, 15, 55, and 58 are critical (i.e., unexpected results). *Woodruff*, 919 F.2d at 1578." With all due respect, Appellant asserts that the cited case does not support the Board's conclusion.

In *Woodruff*, a single reference was almost anticipatory. The McGill reference only differed from the claimed methods due to "a slight difference in the ranges of carbon monoxide concentration" and a newly disclosed benefit of the method. *In re Woodruff*, 919 F.2d 1575, 1578 (Fed. Cir. 1990). Discovery of a new benefit does not make an old process patentable. The reference taught an upper limit of 5% for carbon monoxide while the claim taught all ranges between 5% and 25%. So the ranges touched. Similar facts are found in *In re Peterson* in which a single reference to Shah had overlapping ranges for a compositions relative to the claimed subject matter. *In re Peterson*, 315 F.3d 1325, 1329 (Fed. Cir. 2003).

In the present case, the primary reference Kamauchi does not teach anything at all related to particle uniformity. Manev teaches different compositions and different average particle size ranges. Unlike in *Woodruff* and in *Peterson*, the Examiner in the present case has failed to

establish *prima facie* obviousness because the individual references do not differ by a range and since the combined teachings do not point to the invention. Therefore, criticality is simply not relevant. The Board's assertions to the contrary are an error of law and represent reversible error.

Issue 2

Error or Law in Not Considering The Teachings as a Whole or Considering the Predictability in the Art

Prima facie obviousness is not established if all the elements of the rejected claim are not disclosed or suggested in the cited art. In re Ochiai, 37 USPQ 1127, 1131 (Fed. Cir. 1995). "The test for obviousness *vel non* is statutory. It requires that one compare the claim's 'subject matter as a whole' with the prior art 'to which said subject matter pertains.'"). **"It is impermissible, however, to simply engage in a hindsight reconstruction of the claimed invention, using applicant's structure as a template and selecting elements from references to fill the gaps."** In re Gorman, 18 USPQ2d 1885, 1888 (Fed. Cir. 1991)(emphasis added). The Supreme Court has made it clear that the teachings of references must be considered as a whole. The two initial factual determinations under a Graham analysis of obviousness mandated by the Supreme Court are (A) Determining the scope and content of the prior art and (B) Ascertaining the differences between the prior art and the claims at issue. Graham v. John Deere, 383 U.S. 1, 148 USPQ 459 (1966). The "factors [recited in Graham] continue to define the inquiry that controls." KSR Int'l Co. v. Teleflex Inc., 127 S.Ct. 1727, 1734.

An evaluation of obviousness must consider how the teachings of a particular reference relate to the modifications of another reference in the combination to evaluate what the resulting combination involves. This process must be conducted without the use of the teachings of the applicant's disclosure. The Supreme Count has confirmed the warnings in Graham against

hindsight analysis by noting that a "factfinder should be aware, of course, of the distortion caused by hindsight bias and must be cautious of arguments reliant upon *ex post* reasoning." KSR Int'l Co.,127 S.Ct. at 1742.

While a reference is prior art for all that it teaches, references along with the knowledge of a person of ordinary skill in the art must be enabling to place the invention in the hands of the public. In re Paulsen, 31 USPQ2d 1671, 1675 (Fed. Cir. 1994). See also In re Donohue, 226 USPQ 619, 621 (Fed. Cir. 1985). "The consistent criterion for determination of obviousness is whether the prior art would have suggested to one of ordinary skill in the art that this process should be carried out and would have a reasonable likelihood success, viewed in light of the prior art." Micro Chemical Inc. v. Great Plains Chemical Co., 41 USPQ2d 1238, 1245 (Fed. Cir. 1997)(quoting In Re Dow Chemical Co., 5 USPQ2d 1529, 1531 (Fed. Cir. 1988)).

In the present context, the combined teachings of the references simply do not imply that there is a reasonable expectation of success in forming the particular combination. Some of the issues regarding Manev are discussed further in other sections. However, we note that Manev teaches that grinding is not desirable for battery materials **at all** for any particle size. See, for example, column 2, lines 17-20. Also, Manev teaches that it is not desirable to have the particle size be too small, i.e., submicron. See, for example, column 1, lines 50-67. Furthermore, **Manev does not assert anywhere that they have a technique for producing particles with an average particle size under a micron**. The examples in Manev do not teach the ability to form particles with an average particle size under a micron. So in summary, Manev teaches that you do not want to make the claimed materials, and **nowhere** does the reference assert that they know how to make the materials even if they wanted to make then, which they do not.

Even with these clear shortcomings of the references, then the Examiner and the Board conclude from this that Manev provides a reasonable expectation of success to make submicron uniform powders. With all due respect, the reference does not teach any expectation of success. Manev teaches that it is undesirable to make the claimed materials, and they provide no hint of

how to make the claimed materials. Kamauchi does not teach anything regarding particle uniformity, so this silence certainly does not lead to a reasonable expectation of success without any further evidence on record. The Examiner has provided no additional references or other evidence to fill in the gaps left by the cited reference. And of course hindsight cannot even be used because not only do the references not suggest the success of using the procedures of the references to make Appellant's claimed materials, but Appellant's specification does not even use the Manev methods to make the materials in Appellant's application. So even hindsight fails to support the Board's position that the references teach a reasonable expectation of success.

Appellant's refer to a contemporaneous reference U.S. 5,549,880. This patent relates to vanadium oxides for battery materials. This patent is completely unrelated to Appellant. As stated at column 1, lines 51-55, "present processes produce vanadium oxide in the form of lumps. By standard milling techniques it is difficult to reduce the lumps to a size less than 100 micrometers (microns) and extremely difficult to achieve closer to 10 microns." It was simply not known in the art that milling was a predictable process. Yet, with all due respect, the Examiner and the Board simply assume that techniques that were used to mill metal oxides with an average particle size greater than a micron had a reasonable expectation of success at producing Applicant's claimed particle size distribution without any support for the proposition from the cited references or other evidence. There is absolutely no evidence on the record to support this position. With all due respect, if there was any evidence in the art to support this position, why is none of this documentation been provided by the PTO so that Appellant's can refute the evidence. There is a moderate level of unpredictability in the field of nanotechnology which is completely ignored by the Examiner.

In summary, Manev simply does not teach that Kamauchi can be modified with any expectation of success whatsoever in practicing Appellant's claimed invention. With all due respect, the Board's application of the law in this context is clear reversible error.

Clear Error of Fact in Asserting That Manev Makes Up for the Deficiencies of Kamauchi

Manev does not in any way suggest that Applicant's claimed composition of matter can be formed. Therefore, there is absolutely no way that Manev can make up for the deficiencies of Kamauchi in this regard. Manev does not even teach any relevant processes beyond the teachings of Kamauchi. Since the combination of teachings cannot possibly provide any expectation of success with respect to practicing Applicant's claimed invention, it is very clear error of fact to assert that there is a reasonable expectation of success, and this is clearly reversible error of fact.

Issue 3

Error of Law With Respect to Evaluation of Teaching Away

"The Court relied upon the corollary principle that when the prior art teaches away from certain known elements, discovery of a successful means of combining them it is more likely to be nonobvious." *KSR Intern. Co.*, 127 S.Ct. at 1740. "A reference will teach away if it suggests that a line of development flowing from the reference's disclosure is unlikely to be productive of the result sought by the applicant." *Winner International Royalty Corp. v. Wang*, 53 USPQ2d 1580, 1587 (Fed. Cir. 2000)(quoting *In re Gurley*, 31 USPQ2d 1130, 1131 (Fed. Cir. 1994)). "A reference may be said to teach away when a person of ordinary skill, upon reading the reference, would be discouraged from following the path set out in the reference, or would be led in a direction divergent from the path that was taken by the applicant." *In re Gurley*, 27 F.3d 551, 553 (Fed. Cir. 1994).

Manev teaches clearly that the average particle sizes should not be too small. See, for example, column 1, lines 50-67 ("Nevertheless, a decrease in the mean particle size results in a significant increase in the electronic resistivity of the spinel compounds."). Thus, Manev limits further discussion for average particle sizes greater than a micron. Manev does not teach how to

make particles with an average particle size less than a micron. Yet, with all due respect, somehow Manev is used by the Examiner to support the teaching of how to make uniform submicron powders of the materials from Kamauchi. With all due respect, this conclusion simply does not follow from the evidence on record.

As noted above, the combination of teachings of the references does not suggest the formation of Appellant's claimed materials or provide a reasonable expectation of success, as analyzed in detail above. And even on top of that Manev actively discourages the combination by teaching that the particle size should not be too small. Thus, with all due respect, Manev clearly and actively discourages the formation of the combination suggested by the Examiner and the Board. A person of ordinary skill in the art reading Manev would be discouraged form following the path of the Appellant's, which is the legal issue of relevance. Therefore, Manev teaches away, and the Board's holding to the contrary is clear error of law and reversible error.

<u>Issue 4</u>

<u>Error of Law in not Weighting Declaration Properly</u>

Appellant has described in detail above how the combined teachings of Kamauchi and Manev simply do not teach or suggest the subject matter of Appellant's claimed invention. Specifically, the references do not teach or suggest submicron, uniform metal phosphate powders. Even assuming for argument purposes that the combined teachings of the references did suggest the claimed subject matter, the references still do not provide a reasonable expectation of success as described in detail above. Thus, the references fall short in several dimensions from establishing *prima facie* obviousness. Nevertheless, Appellant went to the expense and effort of showing that the methods of Kamauchi and Manev do not work to produce the claimed subject matter. The experiments are outlined in the Declaration of Dr. Horne and Dr. Chang. The Declaration provides un-refuted evidence that the teachings of the references simply do not place Appellant's claimed invention in the hands of the public, and the rejection must be withdrawn.

The use of declaration evidence to establish non-enablement of a patent has been addressed in the case law. "To successfully rebut the examiner's prima facie case of enablement, it was incumbent upon [the applicant] to introduce **affidavits** or other factual evidence in support his position." In re Payne, 203 USPQ 245, 256 (CCPA 1979) (emphasis added). "Facts, such as test data demonstration inoperativeness...or facts set forth in an **affidavit (37 CFR 1.132) of an expert in the field suggesting that inoperativeness, would be highly probative.**" Id. (emphasis added). Applicants can rebut a presumption of operability of a reference by showing by a preponderance of the evidence that the reference is inoperable. In re Sasse, 207 USPQ 107, 111 (CCPA 1980) ("He had to rebut the presumption of operability of Guillot [patents] by a preponderance of the evidence."). Declaration evidence is sufficient to rebut the presumption of operability and operates to place the burden back onto the PTO to rebut the contention of non-enablement. Id. at 111-112.

A recent Federal Circuit case based on a patent application with an overlapping inventor as the present case on appeal has further clarified the issue of Declarations directed to lack of a reasonable expectation of success of the teachings of a reference. "The applicant has the burden of coming forward with evidence in rebuttal, when the prior art includes a method that appears, on its face, to be capable of producing the claimed composition. **This burden may be met by presenting sufficient reason or authority or evidence, one the facts of the case, to show that the prior art method would not produce or would not be expected to produce the claimed subject matter."** In re Kumar, 418 F.3d 1361, 1368 (Fed. Cir. 2005) (emphasis added). "To render a later invention unpatentable for obviousness, the prior art must enable a person of ordinary skill in the field to make and use the later invention. Beckman Instruments, Inc. 892 F.2d at 1551; Payne, 606 F.2d at 314. Thus the relevant inquiry is not whether the Rostoker patent was invalid for lack of enablement, but whether Rostoker enabled persons skilled in the art to produce particles of the size and distribution claimed by Kumar." Id, at 1369.

See also, Ex parte Logan, 38 USPQ2d 1852, 1856 (BPAI 1994) (unpublished). While this Board case is not binding precedent, it is probative of an appropriate analysis under the

present facts. In Ex parte Logan, Id., the claims were rejected over a patent and a corresponding patent application. In response to the rejection, appellants argued that the cited patent and application were inoperable. In support of the appellants' assertions, a declaration was presented. The Examiner dismissed the declaration as mere opinion by an interested party. The Board in this case noted that the factual evidence presented in the declaration was probative of the issues. Furthermore, the Examiner did not offer any evidence or argument that the required modifications to make the previous invention functional would have been made by a person of ordinary skill in the art. The board concluded that the appellant had met their burden of rebutting the presumption of operability of the prior art patent by a preponderance of the evidence. Id. In reaching this holding, the court expressly noted that, "**the examiner has failed to shoulder his burden of rebutting the appellant's evidence of non-enablement/inoperability.**" Id. (emphasis added).

There is no evidence on record to rebut the position of Appellant. The failure to give a reasonable weight to the Declaration of Dr. Horne and Dr. Chang is a clear error of law and represents reversible error. The factual issues relating to the Declaration are discussed in the next section.

Error of Fact with Respect to Evaluation of the Objective Evidence

Even though Appellant's have maintained strenuously that no showing of *prima facie* obviousness has been established, Appellant's have presented objective evidence in the form of experiments presented in a declaration and published performance results obtained from third party laboratories. The Board objected to the Declaration evidence based on an asserted lack of the description of the average particle size. We sincerely apologize for any confusion regarding the Declaration. The Examiner did not raise the issues, and it was believed that the necessary aspects were sufficiently clear from data. With all due respect, this information is inherently

disclosed in the declaration. Furthermore, the precise value of average particle size is not critical to the interpretation of the results with respect to the failure of the grinding process to obtain the claimed material, as noted further below.

From Table 5, the median value is about 0.16 microns of 160 nanometers, based on the 50% value that defines the median. In other words, the median value is the number where half the particles have a smaller size and half the particles have a larger size. This is consistent with a visual observation of Figure 7. The peak is at about 1.2, but the asymmetry of the peak indicates that the median diameter would be at a somewhat higher value than the peak maximum.

The undersigned calculated the mean from Table 5. Since larger diameters are weighted more in evaluating the mean, the mean will be larger than the median. The calculated value of the average diameter is 0.226 microns or 226 nanometers.

With respect to **Claim Groups 1-4**, five times the average value is 1.13 microns. Roughly 0.75% of the particles (3 particles for every four hundred particles) have a diameter greater than this value. Thus, this is far outside the claim that specifies that essentially no particles have a diameter outside of this range. At paragraph [0123] of Appellant's published application it is indicated that the a cut off in the tail of the distribution essentially as claimed corresponds with less than 1 in one million particles with greater than 5 times the average diameter, which is more than a factor of 5000 less than what was found from grinding. Thus, the particles collections from grinding have a significant tail in the particle size distribution in clear and stark contrast with Applicant's claimed powders. With all due respect, this feature of the distribution from grinding is clear regardless of the precise value of the average particle size.

With respect to independent claims 55 and 58 of **Claim Groups 5 and 6**, 40 percent of the average diameter is 0.0904. In Table 5, there are more than 20% of the particles with a particle size less than 0.4 times the average particle size. Also, there are more than 11% with a

particle size greater than 1.6 times the average particle size. Therefore, the grinding approach similarly does not come close to reproducing the claimed uniformity with respect to this expression of the uniformity. Since the distribution is significantly wider than the claimed distribution on both ends of the distribution, the precise value of the average particle size is again not critical since any shift of the average particle size exacerbates the distinction from the claimed material on one side of the distribution.

Based on the analysis above, it is clear that the results presented in the Declaration of Dr. Horne and Dr. Chang demonstrate that milling as disclosed in the Kamauchi patent and the Manev patent falls significantly short of producing the claimed uniformity of the powders.

On pages 16-17 of the Board Decision, it is asserted that the Delacourt article is not convincing since Kamauchi and Manev teach that the result is expected. Appellant notes that this pear reviewed article published in 2006 states in its conclusion (emphasis added) that "besides being very attractive on a practical aspect, $LiFePO_4$-type electrodes bring us **new insights** about the importance of size effects on electrochemical activity." This implies that the results were somewhat surprising to this research group, and the reviewers of the article agreed that this was a surprising result. With all due respect, since the result seemed to be surprising to the authors of this article and to the peer reviewers of the article, the Board's conclusions seem unfounded. The Striebel article further concludes that "the utilization of the material can be poor if the particle size is large, or if the distribution of particle size is wide." See the last sentence of the Striebel article conclusions on page A669. There is no suggestion in the Striebel article that this was an expected result.

With respect to the cited references, Kamauchi does not teach anything about particle uniformity. Manev teaches with respect to metal oxides that the particle size should not be too small. The Manev materials have particle sizes that are several microns in size. While Manev teaches a lower limit of one micron, there is nothing in Manev to suggest whatsoever that lithium

metal phosphates that are below a micron and uniform will have superior performance. In fact Manev suggests that particles lower than their range generally will have inferior performance. See column 1, lines 50-67.

With all due respect, the factual errors relating to the failure to include properly in the analysis the Horne-Chang Declaration and the articles by Delaourt and Striebel represent clear errors of fact and are reversible error.

Rejections Over Kamauchi in view of Manev and Goodenough

The Board decision does not attribute any particular relevance to Goodenough for the relevant issues. Appellant agrees with the Board in this respect. Thus, the analysis above holds equally for claims 8, 9 and 18 that are rejected over Kamauchi in view of Manev and Goodenough.

CONCLUSIONS

Obviousness is a question of law to be evaluated based on underlying factual questions. *Alza Corp. v. Mylan Laboratories, Inc.*, 464 F.3d 1286, 1289 (Fed. Cir. 2006). With all due respect, Appellant has presented 5 errors of law and three errors of fact. Any one of these can be dispositive, and each of these is reversible error.

Appellant submits that the pending claims are not rendered *prima facie* obvious over the combined teachings of the cited references. Appellant believes that the Patent Office has failed to meet their burden of persuasion with respect to unpatentability of any of the claims on the present record. Furthermore, Appellant has submitted unrefuted objective evidence to support their position on patentability and overcome any showing of *prima facie* obviousness. Thus, Appellant respectfully requests the reversal of the rejections of claims 1, 3, 6-9, 12, 14-21, 48-50, 52, 53, 55, 56 and 58-61.

Respectfully submitted,

Peter S. Dardi

Peter S. Dardi, Ph.D.
Registration No. 39,650

Customer No. 62274
Dardi & Associates, PLLC
2000 U.S. Bank Plaza
220 South 6th Street
Minneapolis, Minnesota 55402
Telephone: (404) 949-5730